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Biosynthesis of the subtilisin-like serine proteinase of Bacillus intermedius under salt stress conditions

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Abstract

The biosynthesis of the subtilisin-like serine proteinase of Bacillus intermedius 3-19 by the recombinant strain Bacillus subtilis AJ73(pCS9) was found to be enhanced under salt stress conditions (growth in a medium containing 1 MNaCl and 0.25 M sodium citrate). In a recombinant strain of B. subtilis deficient in the regulatory proteins DegS and DegU, which control the synthesis of degradative enzymes, the expression of the proteinase gene was inhibited. In contrast, in the strain B. subtilis degU32(Hy), which provides for the overproduction of proteins positively regulated by the DegS-DegU system, the biosynthesis of the subtilisin-like proteinase of B. intermedius 3-19 increased by 6-10 fold. These data suggest that the DegS-DegU system is involved in the positive regulation of the expression of the subtilisin-like B. intermedius proteinase gene in recombinant B. subtilis strains. © Nauka/Interperiodica 2006.

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Keywords

Bacillus, Recombinant strain, Salt stress, Subtilisin-like serine proteinase, Two-component system